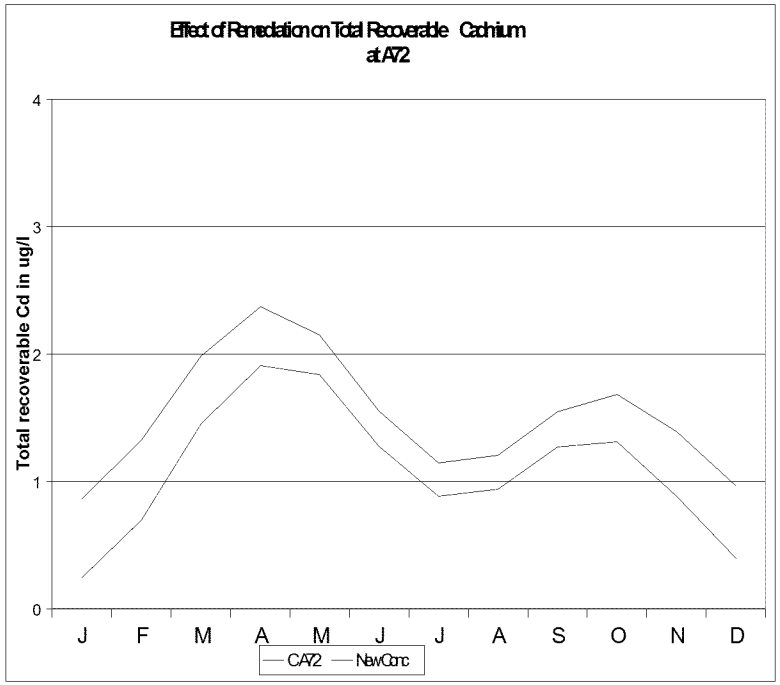
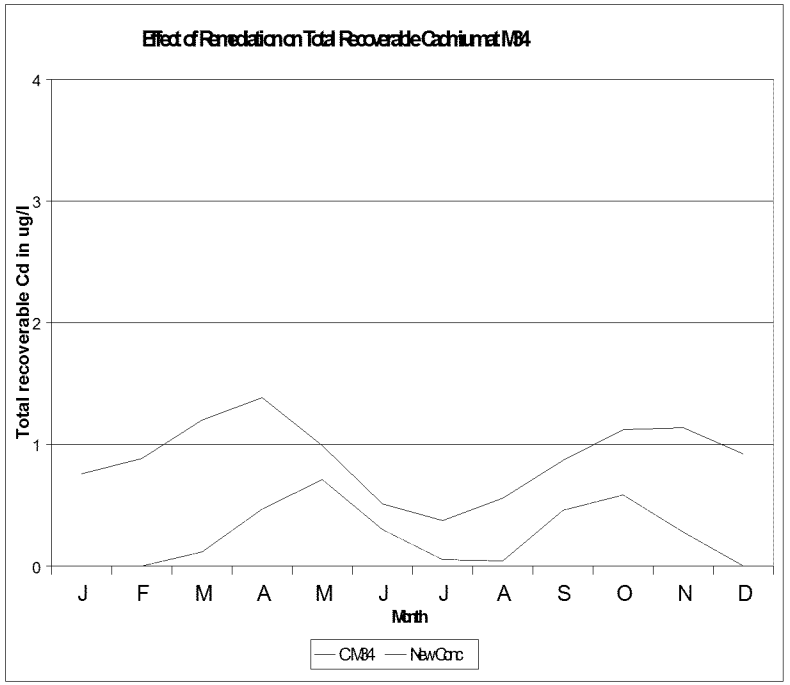
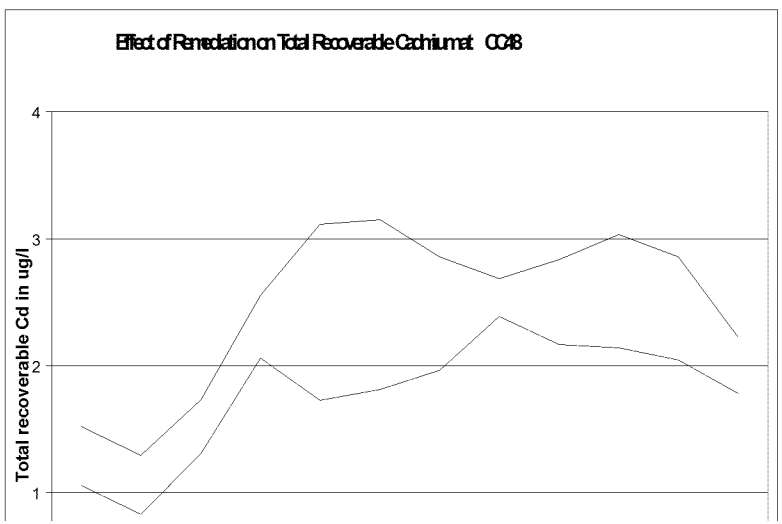
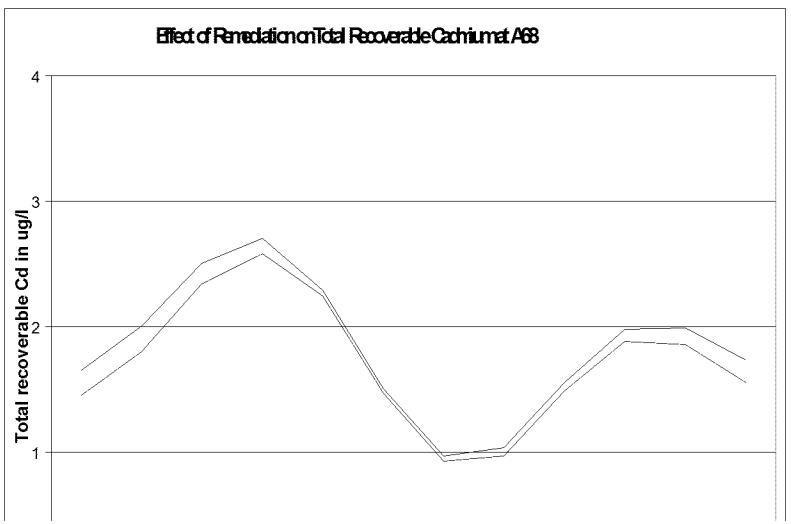
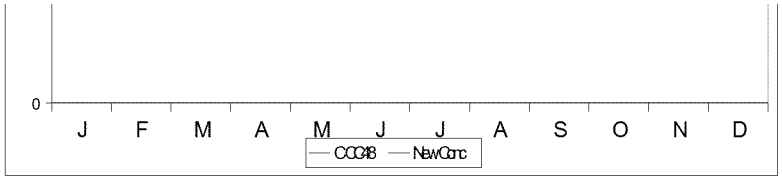
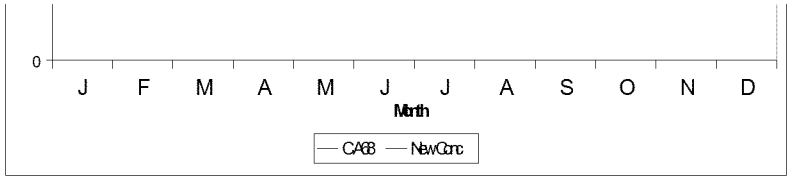

Effect of Remediation on Total Recoverable Cadmium at A72
Total recoverable Cd in ug/l
0
1
2
3
4
J F M A M J J A S O N D
CA72
NewConc


Effect of Remediation on Total Recoverable Cadmium at M84
Total recoverable Cd in ug/l
0
1
2
3
4
J F M A M J J A S O N D
Month
CM84
NewConc


Effect of Remediation on Total Recoverable Cadmium at CC48
Total recoverable Cd in ug/l
1
2
3
4


Effect of Remediation on Total Recoverable Cadmium at A68
Total recoverable Cd in ug/l
1
2
3
4


0
J F M A M J J A S O N D
CCC48 NewConc


0
J F M A M J J A S O N D
Month
CA68 NewConc

charge in cfs				
	Intercept	coefficient		
	Runoff		Low Flow November-March	
M34	-2.771	0.394	-2.28954	0.38718
CC48	1.752	0.130	6.77165	0.10539
A68	-11.131	0.498	-3.62869	0.45153

Cadmium Concentration Coefficients		
	B	Intercept
A72	0.000	1.51469
M34	0.004	0.09818
CC48	0	2.49092
A68	0	1.82408

Discharge Relationships among the three gages

	MONTH	J	F	M	A	M	J	J
	Intercept	1	1	1	1	1	1	1
	A 72	64	63	77	155	682	1196	624
	M34	22	22	28	58	266	468	243
	CC48	14	13	15	22	91	158	83
	A68	25	25	31	66	329	585	300
	Ground wate	3	3	3	9	-3	-14	-2

1/(1+BQ) Discharge Representation

	A 72	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
	M34	0.9175	0.9188	0.9008	0.8110	0.4847	0.3481	0.5072
	CC48	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
	A68	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Date variables

	sin	0.1552	0.6358	0.9276	0.9887	0.7862	0.3629	-0.1441
	cos	0.9879	0.7719	0.3737	-0.1496	-0.6180	-0.9318	-0.9896
	sin1	0.3066	0.9815	0.6932	-0.2959	-0.9717	-0.6763	0.2852
	cos1	0.9518	0.1916	-0.7207	-0.9552	-0.2361	0.7366	0.9585
	Consent	1	1	1	1	1	1	1
A72	Intercept	1	1	1	1	1	1	1
	BQ	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
	sin	0.1552	0.6358	0.9276	0.9887	0.7862	0.3629	-0.1441
	cos	0.9879	0.7719	0.3737	-0.1496	-0.6180	-0.9318	-0.9896
	sin1	0.3066	0.9815	0.6932	-0.2959	-0.9717	-0.6763	0.2852
	cos1	0.9518	0.1916	-0.7207	-0.9552	-0.2361	0.7366	0.9585
	Consent							
A72 Concentration		**0.9**	**1.3**	**2.0**	**2.4**	**2.2**	**1.6**	**1.1**
M34	Intercept	1	1	1	1	1	1	1
	BQ	0.9175	0.9188	0.9008	0.8110	0.4847	0.3481	0.5072
	sin	0.1552	0.6358	0.9276	0.9887	0.7862	0.3629	-0.1441
	cos	0.9879	0.7719	0.3737	-0.1496	-0.6180	-0.9318	-0.9896
	sin1	0.3066	0.9815	0.6932	-0.2959	-0.9717	-0.6763	0.2852
	cos1	0.9518	0.1916	-0.7207	-0.9552	-0.2361	0.7366	0.9585
	Consent	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
M34 Concentration		**1**	**1**	**1**	**1**	**1**	**1**	**0**

CC 48	Intercept	1	1	1	1	1	1	1
	BQ	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
	sin	0.1552	0.6358	0.9276	0.9887	0.7862	0.3629	-0.1441
	cos	0.9879	0.7719	0.3737	-0.1496	-0.6180	-0.9318	-0.9896
	sin1	0.3066	0.9815	0.6932	-0.2959	-0.9717	-0.6763	0.2852
	cos1	0.9518	0.1916	-0.7207	-0.9552	-0.2361	0.7366	0.9585
	Consent	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
CC 48 Concentratrion		**2**	**1**	**2**	**3**	**3**	**3**	**3**
A68	Intercept	1	1	1	1	1	1	1
	BQ	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
	sin	0.1552	0.6358	0.9276	0.9887	0.7862	0.3629	-0.1441
	cos	0.9879	0.7719	0.3737	-0.1496	-0.6180	-0.9318	-0.9896
	sin1	0.3066	0.9815	0.6932	-0.2959	-0.9717	-0.6763	0.2852
	cos1	0.9518	0.1916	-0.7207	-0.9552	-0.2361	0.7366	0.9585
	Consent	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
A68 Concentration		**2**	**2**	**3**	**3**	**2**	**2**	**1**
Concentratio		1	1	2	2	2	1	1
Load in pounds per day								
	Sum	0	0	1	2	7	9	3
	A72	0	0	1	2	8	10	4
	% Difference	0.49	0.09	-0.06	-0.09	-0.12	-0.14	-0.14
	RPD	0.40	0.08	-0.06	-0.10	-0.13	-0.15	-0.15

dmium Concentration Coefficients

Bq	sin	cos	sin1	cos1	Consent
0	0.32001	-0.19032	-0.15579	-0.48788	0.000
1.06168	0.13396	-0.04585	-0.19308	-0.24108	0
0	-0.33663	-0.62245	-0.47908	-0.16659	0
0	0.40996	0.28584	-0.21475	-0.47368	0

A	S	O	N	D
1	1	1	1	1
268	187	142	92	70
103	71	53	33	25
37	26	20	16	14
122	82	60	38	28
6	8	9	4	3
1.0000	1.0000	1.0000	1.0000	1.0000
0.7087	0.7792	0.8247	0.8824	0.9097
1.0000	1.0000	1.0000	1.0000	1.0000
1.0000	1.0000	1.0000	1.0000	1.0000
-0.6271	-0.9360	-0.9878	-0.7716	-0.3573
-0.7789	-0.3521	0.1556	0.6361	0.9340
0.9769	0.6591	-0.3074	-0.9816	-0.6674
0.2135	-0.7521	-0.9516	-0.1908	0.7447
1	1	1	1	1
1	1	1	1	1
1.0000	1.0000	1.0000	1.0000	1.0000
-0.6271	-0.9360	-0.9878	-0.7716	-0.3573
-0.7789	-0.3521	0.1556	0.6361	0.9340
0.9769	0.6591	-0.3074	-0.9816	-0.6674
0.2135	-0.7521	-0.9516	-0.1908	0.7447
1.2	**1.5**	**1.7**	**1.4**	**1.0**
1	1	1	1	1
0.7087	0.7792	0.8247	0.8824	0.9097
-0.6271	-0.9360	-0.9878	-0.7716	-0.3573
-0.7789	-0.3521	0.1556	0.6361	0.9340
0.9769	0.6591	-0.3074	-0.9816	-0.6674
0.2135	-0.7521	-0.9516	-0.1908	0.7447
1.0000	1.0000	1.0000	1.0000	1.0000
1	**1**	**1**	**1**	**1**

1	1	1	1	1
1.0000	1.0000	1.0000	1.0000	1.0000
-0.6271	-0.9360	-0.9878	-0.7716	-0.3573
-0.7789	-0.3521	0.1556	0.6361	0.9340
0.9769	0.6591	-0.3074	-0.9816	-0.6674
0.2135	-0.7521	-0.9516	-0.1908	0.7447
1.0000	1.0000	1.0000	1.0000	1.0000
3	**3**	**3**	**3**	**2**

1	1	1	1	1
1.0000	1.0000	1.0000	1.0000	1.0000
-0.6271	-0.9360	-0.9878	-0.7716	-0.3573
-0.7789	-0.3521	0.1556	0.6361	0.9340
0.9769	0.6591	-0.3074	-0.9816	-0.6674
0.2135	-0.7521	-0.9516	-0.1908	0.7447
1.0000	1.0000	1.0000	1.0000	1.0000
1	**2**	**2**	**2**	**2**

1	1	2	2	1

2	1	1	1	1
2	2	1	1	0

-0.11	-0.06	0.06	0.30	0.59
-0.12	-0.06	0.06	0.26	0.45

A72

Chronic TVS at A72

	a2	b2
Cd	-3.49	0.7852
Cu	-1.7428	0.8545
Mn	5.8743	0.3331
Zn	0.8669	0.8473

Predicction Equation Coefficients

	Hardness	Aluminum	Cadmium
B	0.006	1.000	0.006
Intercept	82.304	-26.540	1.020
BQ	200.676	5610.562	1.466
sin	16.936	158.116	0.599
cos	48.860	40.749	0.066
sin1	15.385	127.998	-0.265
cos1	-5.633	6.691	-0.292
Consent			

Month	J	F	M	A	M	J	J
Q	64	63	77	155	682	1196	624
Hardness	277	290	268	196	91	53	72
Al ch	87	87	87	87	87	87	87
Cd ch	2.2	2.3	2.1	1.7	1.0	0.6	0.8
Cu ch	11	11	10	8	4	3	3
Mn ch	2317	2352	2290	2064	1598	1333	1482
Zn ch	279	290	271	208	109	68	90

M 34

Prediction equation coefficients

	Hardness	Aluminum	Cadmium	Copper	Iron	Zinc
B	0.013	1.00	0.021	0.123	0.06521	0.021
Intercept	60.05228	15.10361	0.91724	14.65129	77.70523	05.25873
BQ	05.02801	38.29032	0.60966	00.98354	70.29706	78.11589
sin	9.24827	69.03843	0.26911	14.16661	-89.38888	88.77920
cos	32.30173	79.08681	0.20991	10.17487	38.04002	85.94018
sin1		435.43127	-0.12214	1.04278	86.24646	-17.99615
cos1		123.10453	-0.14689	-3.82920	-12.30367	-45.60154
consent		-265.10754		-10.75402	35.80515	-98.00378

	MONTH	J	F	M	A	M	J	J
Avg monthly	Q	22	22	28	58	266	468	243
	Hardness	255	241	226	170	86	60	76
Chronic Stan	Al, ch	87	87	87	87	87	87	87
	Cd,ch	2.1	2.0	1.9	1.5	0.9	0.7	0.8
	Cu ch	20	19	18	14	8	6	7

	Mn	2253	2212	2163	1969	1571	1389	1504
	Zn ch	260	248	235	185	104	76	93

A68 Animas at Silverton

Prediction equation coefficients

		Hardness	Cadmium	Copper	Manganes	Zinc
	B	0.011	na	na	0.010	0.016
	Intercept	37.945	2.395	5.783	258.473	304.617
	BQ	165.600			1371.923	644.136
	sin		1.712	2.049	611.024	315.451
	cos		0.140	0.729	81.662	-18.603
	sin1		-0.250	-1.520	16.031	-33.783
	cos1		-1.185	-0.472	-263.628	-140.108
	May		-1.936	2.261	-258.699	
	consent		-0.714	-1.828	411.428	-67.174

Animas R	Month	J	F	M	A	M	J	J
	Q	25	25	31	66	329	585	300
	Hardness	168	168	161	134	74	60	76
	Cd,tvs	1.5	1.5	1.5	1.3	0.8	0.7	0.8
	Cu tvs	14	14	13	11	7	6	7
	Mn tvs	1959	1961	1934	1818	1491	1393	1509
onic stand	Zn tvs	182	183	177	151	91	77	94

ction Equation Coefficients

Copper	Iron	Zinc
0.100	0.048	0.014
11.592	325.430	272.266
-11.516	6156.248	697.432
5.618	310.323	155.229
5.955	262.025	37.490
1.700	-72.066	-37.359
-0.594	-177.065	-77.421
-1.491		

A	S	O	N	D
268	187	142	92	70
124	158	182	215	248
87	87	87	87	87
1.2	1.4	1.6	1.8	2.0
5	7	7	9	10
1772	1920	2013	2129	2233
141	173	195	225	255

	Acute TVS at M34		Chronic TVS at M34	
	a2	b2	a3	b3
Cd	-3.828	1.128	-3.49	0.7852
Cu	-0.7703	0.9422	-1.7428	0.8545
Mn	4.4995	0.7893	5.8743	0.3331
Zn	0.8904	0.8473	0.8669	0.8473

A	S	O	N	D
103	71	53	33	25
126	151	192	217	253
87	87	87	87	87
1.2	1.4	1.7	1.8	2.0
11	13	16	17	20

1783	1892	2050	2136	2246
144	167	205	227	258

	Chronic TVS at A68	
	a2	b2
Cd	-3.49	0.7852
Cu	-1.7428	0.8545
Mn	5.8743	0.3331
Zn	0.8669	0.8473

A	S	O	N	D
122	82	60	38	28
109	125	138	155	165
1.1	1.2	1.3	1.4	1.5
10	11	12	13	14
1695	1777	1836	1908	1947
126	142	155	171	180